Example of a Preliminary Alternative #27
Corresponding to Alternative Formulation Strategy 1B,2B,3A,4A Maximum

Primary Conflict	Approach to Resolve Conflict
Fisheries and Diversions (Conflict 1)	Increase Fish Productivity (1A) **Diversion Modification (1B)**
Habitat and Land Use/Flood Protection (Conflict 2)	Preserve Existing Land Use (2A) **Create Additional Habitat Area (2B)**
Water Supply Availability and Beneficial Uses (Conflict 3)	**Reduce Critical Export Area Demands (3A)** Enhance Delta Supplys as Inflows (3B)
Water Quality and Land Use (Conflict 4)	**Managing Quality of Delta Inflow (4A)** Manage Instream/In-delta Water Quality (4B)
Minimum or **Maximum**	

Solution Overview

The objective of this maximum alternative is to increase fish populations by reducing the diversion impacts on fish species. Actions included in this alternative include those to increase habitat, reduce critical-year Delta export demands, and manage water quality by source control. This alternative precludes preserving existing land use, increasing flow to the Delta to reduce fish impacts, or managing instream water quality.

Actions Selected

Habitat, - This alternative is characterized by minimal actions to improve fisheries productivity and shallow habitat area, nearshore areas, levee maintenance practices, and source control of water quality improvements.
Populations - Fish populations are increased by reducing the impacts of diversions.
Diversions - By seeking to reduce critical export demands, this alternative will result in additional water available for Delta uses.
Water Use - This alternative would not make additional water available for water supplies, but would reduce critical-year demands.
Water Quality - This alternative includes source treatment of pollutants.
Land Use/Levees/Flood Protection - Land use actions in this alternative will add to habitat, possible at the expense of existing land uses.
Institutional - This alternative established or expands public information programs, intra-agency cooperation, and changes in the Water Code.

Preliminary Assessment

This alternative would improve existing Delta habitat, increase the areal extent of usable habitat, and manage the water quality of source discharge. As a maximum alternative, the actions implemented to achieve this alternative involve new regulations, programs, or projects. The weakness of this alternative is that it does not directly increase fish populations or critical-year flow to the Delta. In addition, emphasizing a reduction in critical-year demands in the export area may decrease the reliability of these water supplies.

	Alt 27 1b, 2b, 3a, 4a, Maximum	
Category	Actions Selected	Functional Basis
	-Restore and enhance existing wetlands	Habitat
	-Expand wetland acquisition programs	Habitat
	-Convert agricultural lands to wetlands	Habitat
	-Protect existing wetland habitat	Habitat
	-Protect existing upland habitat	Habitat
	-Establish upland habitat on levees	Habitat
	-Establish upland habitat on fallowed croplands	Habitat
	-Establish oak woodlands on suitable soils	Habitat
	-Encourage wildlife-friendly agricultural practices	Habitat
	-Preserve agricultural land uses providing habitat	Habitat
	-Clean-up sites containing toxic substances	Habitat
	-Establish regional ecosystem restoration guidelines	Habitat
	-Implement integrated regional habitat management	Habitat
	-Develop cooperative management agreements	Habitat
	-Establish mitigation banking program	Habitat
	-Relocate levees to widen floodways	Habitat
	-Allow river channels to meander	Habitat
	-Acquire Delta islands as overflow areas	Habitat
	-Restore floodways as habitat corridors	Habitat
	-Improve regulation of ballast-water releases	Habitat
	-Improve border inspection practices	Habitat
	-Inspect for invasions of nuisance species	Habitat
	-Manage crops for waterfowl forage production	Habitat
	-Improve management of public waterfowl areas	Habitat
	- Implement terrestrial predator control programs	Habitat
	-Increase sources and availability of wildlife forage	Habitat
	-Restore and replenish spawning gravels	Habitat
	-Restore channel configurations	Habitat
	-Restore shoreline habitat conditions	Habitat
	-Modify gravel mining practices	Habitat
	-Improve floodway drainage to reduce fish stranding	Habitat
	-Restrict livestock grazing in riparian corridors	Habitat
	-Revegetate degraded riparian habitats	Habitat
	-Protect riparian lands through purchase/easements	Habitat
	-Restore flows to dewatered riparian habitats	Habitat
	-Modify floodways to support wetland habitats	Habitat
	-Reuse agricultural drainage to create wetlands	Habitat
	-Reuse urban wastewater effluent to create wetlands	Habitat
	-Manage groundwater recharge for wetland habitat	Habitat
	-Provide instream pulse flows for fish passage	Populations
	-Provide instream flows for fish attraction	Populations
	-Modify volumes and timing of exports	Diversions
	-Modify in-Delta consumptive use	Diversions
	-Modify Central Delta channel operations	Diversions
	-Modify export operations criteria	Diversions
	-Establish a Delta watermaster to manage flows	Diversions
	-Use real-time monitoring and adaptive management	Diversions

-Modify diversion timing of export diversions	Diversions
-Coordinate SWP/CVP diversion timing	Diversions
-Modify diversion timing through Montezuma SCG	Diversions
-Use real-time monitoring and adaptive management	Diversions
-To generate yield	Water Use
-To reduce diversion impacts	Water Use
-To generate yield	Water Use
-To reduce diversion impacts	Water Use
-Increase diversion capability at Red Bluff diversion Dam	Water Use
-Acquire water for refuge habitat use	Populations
-Obtain shifts in diversion timing patterns	Populations
-Modify water law to establish instream rights	Populations
-Improve screens at Delta export pumps	Diversions
-Improve other existing fish screen systems	Diversions
-Install screens on other in-Delta diversions	Diversions
-Install screens on upstream diversions	Diversions
-Consolidate and screen existing small diversions	Diversions
-Enforce screening requirements	Diversions
-Install barriers to block fish movement into Old River	Populations
-Install barriers to keep fish in Sacramento River	Populations
-Install barriers to divert fish from Sacramento to Delat	Populations
-Operate fish barrier on San Joaquin R. at Merced R.	Populations
-Improve design of salvage facilities	Diversions
-Improve operation of salvage facilities	Diversions
-Improve fish hauling and release procedures	Diversions
-Harvest predators at Delta export pumps	Diversions
-Harvest predators in upstream habitats	Populations
-Expand desalination of Southern California supplies	Water Supply
-Improve desalination technologies and cost	Water Supply
-Educate users about desalination feasibility	Institutional
-Increase use of district-wide conservation practices	Water Supply
-Increase use of on-farm conservation practices	Water Supply
-Increase use of municipal conservation practices	Water Supply
-Increase use of industrial conservation practices	Water Supply
-Implement financial incentive policies	Water Supply
-Educate users about conservation technologies	Institutional
-Implement conservation-oriented rate structures	Water Supply
-Recharge groundwater with reclaimed water	Water Supply
-Use reclaimed water for agricultural irrigation	Water Supply
-Reclaim saline agricultural drainage water	Water Supply
-Recycle and treat water for potable reuse	Water Supply
-Use reclaimed water for nonpotable urban uses	Water Supply
-Use reclaimed water for landscape irrigation	Water Supply
-Use reclaimed water for power plant cooling	Water Supply
-Use reclaimed water for industrial processes	Water Supply
-Use reclaimed water to repel salinity intrusion	Water Supply
-Improve reclamation technologies and cost	Water Supply
-Educate public about water reclamation	Water Supply
-Encourage land fallowing during drought periods	Water Supply
-Develop incentive programs for land retirement	Water Supply
-Purchase lands or easements	Water Supply
-Establish incentives for pricing to reduce demand	Water Supply

-Educate users about pricing feasibility	Institutional
-Remove legal obstacles to pricing incentive programs	Water Supply
-Manage riparian zones to protect water quality	Water Quality
-Manage land uses to protect water quality	Water Quality
-Construct new storage south of Delta	Water Supply
-Enlarge existing on-stream storage reservoirs	Water Supply
-Modify operations of existing on-stream reservoirs	Water Supply
-Construct new storage south of Delta	Water Supply
-Enlarge existing off-stream storage reservoirs	Water Supply
-Modify operations of existing off-stream reservoirs	Water Supply
-Establish incentives for conjunctive use	Water Supply
-Modify California Water Code to encourage conjunctive use	Water Supply
-Establish conjunctive use programs	Institutional
-Store groundwater south of Delta	Water Supply
-Implement techniques to increase groundwater recharge	Water Supply
-Construct conveyance to off-stream storage	Water Supply
-Construct conveyance to groundwater storage	Water Supply
-Relocate Delta export pumps from key habitats	Diversions
-Relocate other in-Delta diversions	Diversions
-Relocate upstream diversions from key habitats	Diversions
-Improve diversion designs when relocating	Diversions
-Modify California Water Code to ease transfers	Water Supply
-Improve procedures for transfer permitting	Water Supply
-Coordinate diversion and conveyance of transfers	Water Supply
-Increase water storage capacities at user locations	Water Supply
-Establish incentives for long-term planning	Institutional
-Conduct Integrated Resources Planning	Institutional
-Establish incentives for long-term conservation	Institutional
-Develop alternate supplies for drought situations	Institutional
-Establish a comprehensive water data system	Institutional
-Implement real-time data management system	Institutional
-Integrate data for adaptive management decisions	Institutional
-Establish accessible data management system	Institutional
-Establish long-term guarantees for management	Institutional
-Establish institution to implement guarantees	Institutional
-Coordinate multiagency roles in management	Institutional
-Coordinate groundwater/surface water management	Institutional
-Establish incentives for cooperation/coordination	Institutional
-Establish a public awareness/education program	Institutional
-Establish procedures for allocation of export capacity	Institutional
-Establish institution to allocate export capacity	Institutional
-Coordinate water transfers and export capacity	Institutional
-Market export capacity for environmental benefits	Institutional
-Coordinate land uses with water supplies	Institutional
-Encourage local determination of supplies available	Institutional
-Encourage local assessment of water supply reliability	Institutional
-Implement source control regulations for pollutants	Water Quality
-Implement pollutant-load limits in San Joaquin R.	Water Quality
-Reduce or control volume of agricultural discharges	Water Quality
-Modify cropping and irrigation practices	Water Quality
-Export agricultural drainage to other watersheds	Water Quality
-Retire lands with drainage disposal problems	Water Quality

-Improve pest-control practices	Water Quality
-Avoid use of high-salinity irrigation water	Water Quality
-Manage irrigation tailwater to reduce pesticides	Water Quality
-Treat drainage to remove pollutants	Water Quality
-Retain and manage stormwater runoff	Water Quality
-Implement urban awareness/education programs	Water Quality
-Treat discharges to remove problem constituents	Water Quality
-Construct wetlands to treat wastewater effluent	Water Quality
-Enforce wastewater discharge requirements	Water Quality
-Prevent toxic discharges from industrial plants	Water Quality
-Maintain and stabilize existing levees	Water Supply
-Implement uniform maintenance standards	Water Supply
-Provide funding for maintenance and stabilization	Water Supply
-Relocate levees to more stable sites	Water Supply
-Widen floodways to increase flood conveyance	Water Supply
-Establish and manage flood overflow areas	Water Supply
-Maintain/reconstruct levees around infrastructure	Water Supply
-Reconstruct infrastructure to increase reliability	Water Supply
-Relocate/reroute infrastructure	Water Supply
-Establish a disaster contingency funding program	Institutional
-Establish a Bay-Delta financing authority	Institutional
-Provide low-cost debt financing for local agencies	Institutional
-Establish a bond financing mechanism	Institutional
-Establish a statewide water utility surcharge	Institutional